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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,662	01/28/2002	Ryoichi Mukai	2500.66134	3822

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EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,662

Applicant(s)

MUKAI, RYOICHI

Examiner

Andrew T Piziali

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 3/5/2004 has been entered. The examiner has withdrawn the 35 USC 112 rejections of claims 1-6 based on the amendment to claim 1.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,846,648 to Chen et al. (hereinafter referred to as Chen).

Regarding claims 1-2, Chen discloses a polycrystalline structure film comprising metallic nucleation sites (structured nucleation layer) formed on a surface of a substrate, said metallic nucleation sites including a compound, and a metallic crystal layer (magnetic recording layer) covering over the surface of the substrate and containing crystal grains having grown from the nucleation sites (see entire document including column 9, lines 14-65 and Figures 1-2). Chen discloses that the grain size of the recording layer must be initiated by providing discrete (physically separated), small crystalline seed layer grains (column 9, lines 46-49).

Regarding claim 2, Chen discloses that the compound may be a Cr-based alloy (column 10, lines 23-56).

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (as applied to claims 1-2 above).

Regarding claims 3-6, Chen does not specifically mention using an oxide or nitride compound comprising Pt atoms and Si_3N_4 , SiO_2 , or Al_2O_3 for the structured nucleation layer, but Chen does teach that the structured nucleation layer may be formed of any material provided that the grains are sufficiently small in diameter to permit the growth of small Cr intermediate layer grains (column 10, lines 23-39). Chen also teaches that the material selected for the structured nucleation layer must have a crystal structure capable of allowing the subsequently deposited intermediate Cr layer to assume or develop a crystallographic morphology such that the following magnetic recording layer grows epitaxially with a similar grain morphology (column 10, lines 40-56).

Considering that the magnetic recording layer of Chen may comprise a CoPt-based alloy plus a segregant such as Si_3N_4 , SiO_2 , or Al_2O_3 in a range between 5 and 20 atomic percent (column 15, lines 5-10 and column 11, lines 57-62), absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the structured nucleation layer of Chen from a CoPt-based alloy plus a segregant such as Si_3N_4 , SiO_2 , or Al_2O_3 in a range between 5 and 20 atomic percent, because by making

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both the structured nucleation layer and the magnetic recording layer from the same material the magnetic recording layer would clearly be capable of developing a crystallographic morphology similar (identical) to that of the structured nucleation layer. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Response to Arguments

6. Applicant's arguments filed 3/5/04 have been fully considered but they are not persuasive.

The applicant asserts that Chen fails to teach or suggest physically separated metallic nucleation sites. The examiner respectfully disagrees. Chen discloses that the grain size of the recording layer must be initiated by providing discrete, small crystalline seed layer grains (column 9, lines 46-49). The definition of "discrete" is "Consisting of unconnected distinct parts." Chen clearly teaches physically separated metallic nucleation sites.

The applicant asserts that an alloy is not a compound. The examiner respectfully disagrees. The definition of a "compound" is "A combination of two or more elements or parts." The definition of an "alloy" is "A homogeneous mixture or solid solution of two or more metals, the atoms of one replacing or occupying interstitial positions between the atoms of the other." Clearly, an alloy is a compound.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

gtp 3/21/04

ANDREW T. PIZIALI
PATENT EXAMINER

Terrel Morris

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